In the Claims

1. (Amended) ~~An~~ A carriage assembly comprising:

(A) a piezoelectric actuator ~~elongate columns each~~ having a first end and a second end;

(B) a movable element coupled to the first end of the piezoelectric actuator ~~a translating section disposed between the elongate columns generally equidistant between the first and second ends and interconnected to the elongate columns~~;

(C) a frame coupled to the second end of the first piezoelectric actuator and to said movable element; and

(D) a translating section coupled to said movable element ~~a flexure interconnecting each elongate column to the translating section~~.

2. (Amended) The assembly of claim 1, wherein the movable element comprises a second piezoelectric actuator, and said ~~elongate columns~~ piezoelectric actuators are essentially parallel to one another.

3. (Amended) The assembly of claim 1, wherein motion of said piezoelectric actuator imparts motion of said movable element and said translating section relative to said frame ~~further comprising a carriage that moves~~ in the X-Y coordinate plane ~~and reduces movement of the translating section in the Z direction~~.

4. (Original) The assembly of claim 3, wherein the Z direction is perpendicular to the X-Y coordinate plane.

5. (Original) The assembly of claim 3, wherein the carriage is substantially symmetrical.

6. (Amended) The assembly of claim 1, ~~further comprising~~ wherein said frame is a rigid frame that supports the carriage.

7. (Amended) The assembly of claim 1, wherein said movable element and said piezoelectric actuator are in the form of elongate columns, and further comprising:

(1) upper cross members configured to connect the first ends of the elongate columns; and

(2) lower cross members configured to connect the second ends of the elongate columns.

8. (Amended) The assembly of claim 1, wherein ~~the~~ said movable element and said piezoelectric actuator are in the form of elongate columns, and further comprising flexures interconnecting each elongate column to the translating section, wherein each said flexure further comprises:

(1) a first web formed by a first pair of opposed slots which are formed transversely and extend toward one another in each of the elongate columns;

(2) a second web formed by a second pair of opposed slots which are formed transversely in each elongate column and extend toward the first pair of opposed slots in the same elongate column; and wherein the first web and the second web are arranged perpendicular to one another and spaced apart along the same elongate column.

9. (Amended) The assembly of claim 1, ~~further comprising~~ wherein:

(1) ~~a first piezoelectric~~ the assembly of claim 1 is connected to the translating section, ~~wherein the first piezoelectric assembly~~ and moves the translating section along a first linear path; and further comprising

(2) a second ~~piezoelectric~~ piezoelectrically-driven assembly connected to the translating section, wherein the second piezoelectric assembly ~~moves the translating section~~ creates motion along a second linear path.

10. (Original) The assembly of claim 9, wherein each piezoelectric assembly further comprises:

(1) a central coupler having a rigid section connected to a portion of the translating section;

(2) at least one flexure connected to the rigid section; and

(3) first and second piczoelectric elements, wherein the first piezoelectric element extends from each flexure toward the first end of the elongate column and the second piezoelectric element extends from each flexure toward the second end of the elongate column.

11. (Original) The assembly of claim 10, wherein each flexure interconnects each first and second piezoelectric element with the rigid section.

12. (Amended) The assembly of claim 1, wherein said movable element and said piezoelectric actuator are in the form of elongate columns, and further comprising a plurality of stiffening beams connected to the elongate columns.

13. (Original) The assembly of claim 6, wherein the rigid frame is stainless steel.

14. (cancelled) A carriage for micro-positioning comprising:

(A) elongate columns each having a first end and a second end;

(B) a translating section disposed between the elongate columns generally equidistant between the first and second ends and interconnected to the elongate columns;

(C) a flexure interconnecting each elongate column to the translating section;

(D) first and second piezoelectric assemblies connected to the translating section.

15. (cancelled) The carriage of claim 14, wherein the first piezoelectric assembly moves the translating section along a first linear path and wherein the second piezoelectric assembly moves the translating section along the second linear path.

16. (cancelled) The carriage of claim 14, wherein each piezoelectric assembly further comprises:

(1) a central coupler having a rigid section connected to a portion of the translating section;

(2) at least one flexure connected to the rigid section; and

(3) first and second piezoelectric elements, wherein the first piezoelectric element extends from each flexure toward the first end of the elongate column and the second piezoelectric element extends from each flexure toward the second end of the elongate column.

17. (cancelled) A high resolution measurement device comprising:

(A) a measuring instrument;

(B) an assembly having a moveable carriage that supports the measuring instrument for movement therewith, wherein the assembly further includes elongate columns arranged parallel to one another, each elongate column having a first end and a second end;

(C) a support structure securely carrying the assembly;

(D) a translating section disposed between the elongate columns generally equidistant between the first and second ends and interconnected to the elongate columns;

(E) a flexure interconnecting each elongate column to the translating section;

(F) a first piezoelectric assembly connected to the translating section, wherein the first piezoelectric assembly moves the translating section along a first linear

path; and

(G) a second piezoelectric assembly connected to the translating section, wherein the second piezoelectric assembly moves the translating section along a second linear path.

18. (cancelled) The high resolution measurement device of claim 17, wherein the movable carriage is substantially symmetrical.

19. (cancelled) The high resolution measurement device of claim 17, wherein the distance between the first end of the elongate column and the translating section and the second end of the elongate column and the translating section is equal.

20. (cancelled) A translating section for allowing translational movement in an X direction and a Y direction while preventing any substantial movement of the translating section in a Z direction, the translating section comprising:

(A) a frame having first and second mounting surfaces;

(B) at least two actuators having first and second ends, wherein each of the actuators is extendable and retractable, and the first and second end of each actuator is attached to the corresponding first and second mounting surfaces of the frame respectively;

(C) a center translation platform attached between the first and second ends of the actuators; and

(D) a plurality of flexures arranged to allow translational movement of the center translation platform when the actuators extend and retract during scanning operation.

21. (cancelled) The translating section of claim 20, wherein each actuator further comprises a pair of piezoelectric elements equal in length, wherein each piezoelectric element is electrically connected to a power supply.

22. (cancelled) The translating section of claim 21, wherein the power supply energizes and moves each piezoelectric element.

23. (cancelled) A flexure carriage assembly comprising:

at least two symmetric and opposed actuators each having a first end attached to a frame and an opposed free end;

a platform interposed between teh actuators;

a flexure coupled intermediate the platform and the opposed free end, the flexure being responsive to actuation of the actuators so as to facilitate translation of the platform in a first direction and simultaneously inhibit translation in a second direction.

24. (cancelled) The flexure carriage assembly of the claim 23, wherein the at least two actuators are substantially the same length.

25. (cancelled) The flexure carriage assembly of claim 24, wherein the at least two actuators have substantially equal translation range.

26. (cancelled) The flexure carriage assembly of claim 23, wherein an actuation control signal controls the actuation of the actuators.

27. (cancelled) The flexure carriage assembly of claim 26, wherein the actuation control signal applied to each actuator is the same.

28. (cancelled) The flexure carriage assembly of claim 23, wherein each actuator is mounted non-perpendicular to the platform.

29. (cancelled) The flexure carriage assembly of claim 23, wherein each actuator is a piezoelectric device.